Day 3 - Introduction to limits

On the paper describe your experience w/ accessing the online PDFs.

→ Name
→ did you try?
if yes → how did it go?
if no → why not?

Day 3 - Introduction to limits

Limits

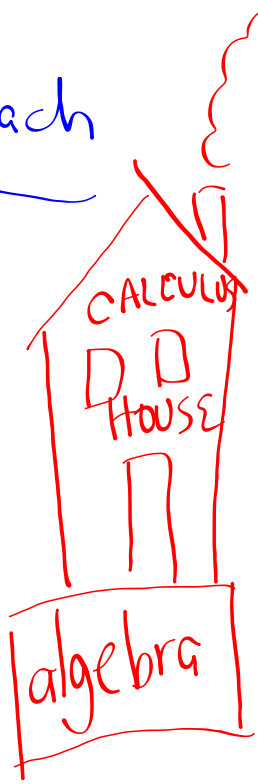
Inductive approach

figure out based on #s or pictures

Deductive approach

be sure

⇒ algebra



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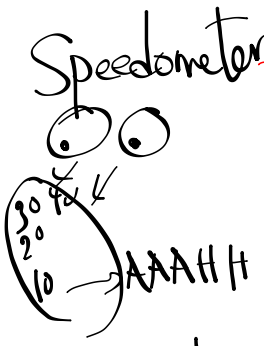
MOTIVATION

DISTANCE = RATE * DURATION



Instantaneous Velocity

DISTANCE = RATE

DURATION

AVERAGE VELOCITY

+, 0 ≈ SPEED

VS

+
0 = VELOCITY

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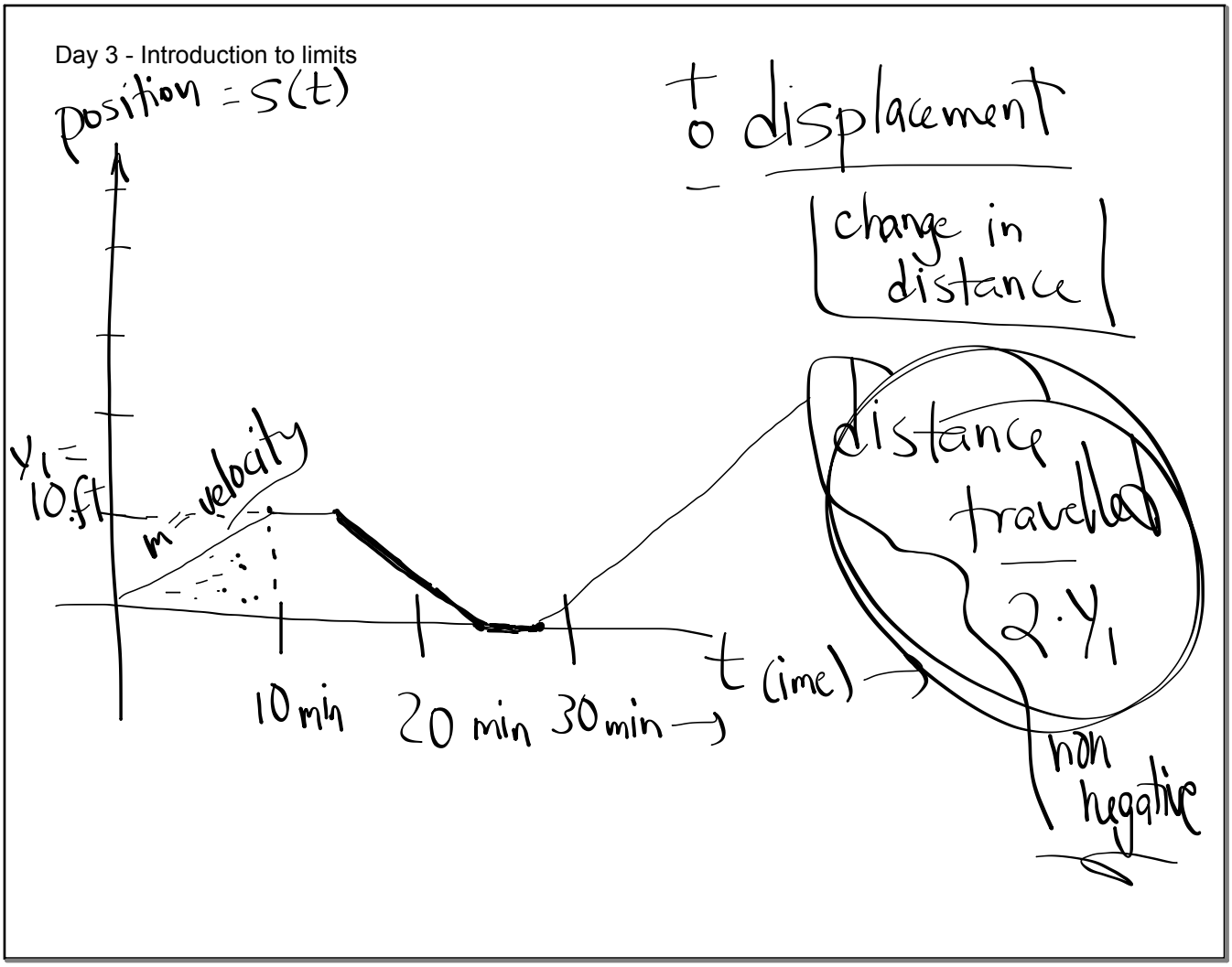

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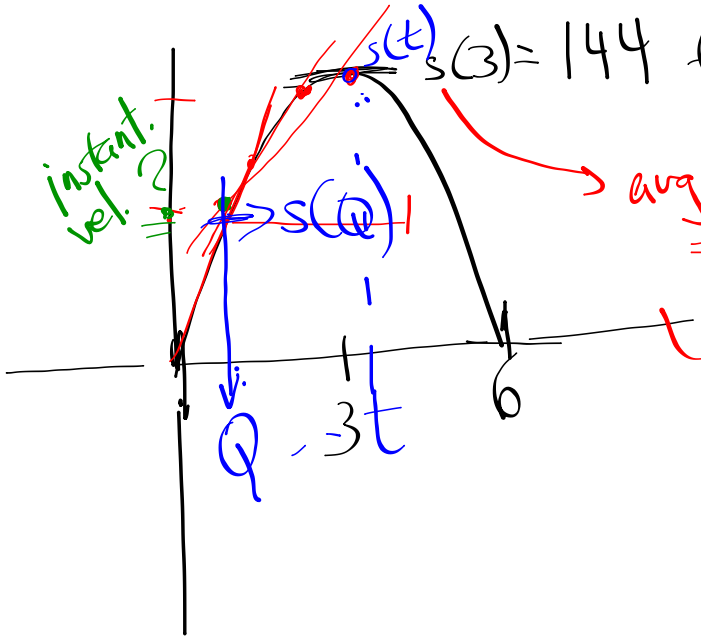
Ex 1. $s(t) = -16t^2 + 96t = (6-t)(16t)$

$s(3) = 144$ ft



avg velocity = slope of secant = line cutting thru middle

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The instantaneous velocity of a blob whose posⁿ is given by $s(t)$, at time $= Q$ is: $\lim_{t \to Q} \frac{s(t) - s(Q)}{t - Q}$

inst vel

avg vel

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$s(t) = -16t^2 + 96t$ $Y_1 = -16x^2 + 96x$

avg vel = $\frac{144-128}{3-2} = 16 \frac{ft}{sec}$

$s(2) = 128$ ft

$s(3) = 144$ ft

avg vel fr t=1 to=2 $s(1) = 80$ ft

$= \frac{128-80}{2-1} = 48 \frac{ft}{sec}$

$Y_1(3)$

VARS → "FUNCTION"

Y_1

Y_2

Y_3

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. . .

$s(t) = -16t^2 + 96t$

inst vel @ $t=2$: $\lim_{t\to 2} \frac{s(t)-s(2)}{t-2} = \lim_{t\to 2} \frac{(-16t^2+96t)-(128)}{t-2}$

CANCEL OUT ZEROS

$= \lim_{t\to 2} \frac{-16(t^2-6t+8)}{t-2}$

$= \lim_{t\to 2} \frac{-16(t-2)(t-4)}{t-2}$

$= \lim_{t\to 2} \frac{-16(t-4)}{1} = +32 \frac{ft}{sec}$

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HW read ch 2, section 1 and 2 (online)

2.1/ 1-33 odd
(by 4s)

ans: ...../ANS_C02.pdf
/C02_s01.pdf

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